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10/783,771	02/20/2004	Joseph P. Odenwalder	030243	6666

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QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER	
TRAN, KHAI	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com
kascanla@qualcomm.com
nanm@qualcomm.com

Office Action Summary	Application No.	Applicant(s)	
	10/783,771	ODENWALDER, JOSEPH P.	
	Examiner	Art Unit	
	KHAI TRAN	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01/08/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/06/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 8, 12-14, 16-17, 19, 23-28, 30, 34-36, 38-39, and 41, 45-46, 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Kim et al. (US 6219374) in view of Felgentreff (US 2002/0131522), and Sung et al (U.S. Pat. 7,149,199) .

Regarding claim 1, Kim discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 1); and a transmitter subsystem coupled to the processing subsystem (figure 1); wherein the processing subsystem is configured to cover different portions of an initial data stream, each portion comprising an I/Q pair of modulated symbols to be transmitted on a first wireless communication channel with at least two different spreading codes (figure 1, col. 3 lines 26-49); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 1, col. 3 lines 26-49). Kim fails to disclose that each spreading code covers each I/Q pairs.

Felgentreff discloses spreading code covering each I/Q pairs as shown in Figure 3 comprising a first I/Q modulator 35 and a second I/Q modulator 36 ([0050]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the dual I/Q modulators as taught by Felgentreff into the teachings of Kim for modulating data signals. The motivation would compensate the pre-distortion signal as illustrated by Felgentreff see [0048].

Kim and Felgentreff fail to disclose each portion of being a different quantity of modulated symbols.

Sung et al disclose each portion of being a different quantity of modulated symbols (as shown in Figure 1. Sung et al disclose that FIG. 3b, signal converters 310, 330, 326, 346, 364, 365 convert logical values "0" and "1" into physical signal "+1" and "-1" to be really transmitted. Each channel of FIG. 2 passes through the signal converters and is then spread in spreaders 312, 332 by each output of two Walsh code generators 362, 363. Transmission power of each channel is adjusted in gain controllers 314, 334, and FIG. 3f like FIGS. 3b and 3d, is identical to FIG. 3e except the fact that, an independent Walsh code generator exists at I and Q channels in order to be able to spread I/Q channel transmitting data through a different orthogonal code symbol. Therefore, it is clear that the portion of an initial data stream is a different quantity of modulated symbols). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modulate the portions of the initial data stream with a different quality of modulated symbols as taught by Sung et al into

the teachings of Kim et al and Felgentreff. The motivation would enable to transmit data with a high-speed packet transmission.

Regarding claim 2, Kim further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 1, col. 3 lines 26-49; where element 101 is being interpreted as a demultiplexer).

Regarding claim 3, Kim further discloses the processing subsystem is configured to cover each of the plurality of intermediate data streams with one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 1, col. 3 lines 26-49).

Regarding claim 4, Kim further discloses the processing subsystem is configured to multiplex the plurality of intermediate data streams into the final data stream (figure 1, col. 3 lines 26-49; where the connection proceeding elements 110 and 111 and preceding element 112 is being interpreted as multiplex).

Regarding claim 5, Kim further discloses the spreading codes are different-length spreading codes (figure 1, col. 3 lines 26 - 49; where it is well known in the art that different spreading factors means different code lengths).

Regarding claim 6, Kim further discloses the spreading codes are Walsh codes (figure 1, col. 3 lines 26-49).

Regarding claim 8, Kim further discloses the initial data stream comprises a stream of symbols (figure 1, col. 3 lines 26-49).

Regarding claim 12, Kim discloses a receiver operable to communicate with a transmitter via a wireless communication channel, wherein the receiver comprises: a processing subsystem (figures 1, 3); and a receiver subsystem coupled to the processing subsystem (figures 1, 3); wherein the receiver subsystem is configured to receive an initial data stream via a first wireless communication channel (figures 1, 3, col. 4 lines 10-64); and wherein the processing subsystem is configured to decode different portions of an initial data stream, each portion comprising an I/Q pair of modulated symbols using at least two different spreading codes (figures 1, 3, col. 4 lines 10-64). Kim fails to disclose each portion of being a different quantity of modulated symbols.

Sung et al disclose each portion of being a different quantity of modulated symbols (as shown in Figure 1. Sung et al disclose that FIG. 3b, signal converters 310, 330, 326, 346, 364, 365 convert logical values "0" and "1" into physical signal "+1" and "-1" to be really transmitted. Each channel of FIG. 2 passes through the signal converters and is then spread in spreaders 312, 332 by each output of two Walsh code generators 362, 363. Transmission power of each channel is adjusted in gain controllers 314, 334, and FIG. 3f like FIGS. 3b and 3d, is identical to FIG. 3e except the fact that, an independent Walsh code generator exists at I and Q channels in order to be able to spread I/Q channel transmitting data through a different orthogonal code symbol. Therefore, it is clear that the portion of an initial data stream is a different quantity of modulated symbols). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modulate the portions of the initial

data stream with a different quality of modulated symbols as taught by Sung et al into the teachings of Kim et al and Felgentreff. The motivation would enable to transmit data with a high-speed packet transmission.

Regarding claim 13, Kim further discloses wherein the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 3, col. 4 lines 10 - 64; where the connection proceeding element r(t) and preceding elements 301 and 302 is being interpreted as a demultiplexer).

Regarding claim 14, Kim further discloses the processing subsystem is configured to decode each of the intermediate data streams using one of a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 3, col. 4 lines 10- 64).

Regarding claim 16, Kim further the spreading codes are different-length spreading codes (figure 3, col. 4 lines 10-64; where it is well known in the art that different spreading factors means different code lengths).

Regarding claim 17, Kim further discloses the spreading codes are Walsh codes (figure 3, col. 4 lines 10-64).

Regarding claim 19, Kim further discloses the decoded data stream comprises a stream of symbols (figure 3, col. 4 lines 10-64)

Regarding claims 23-28, 30, 34-36, 38-39, and 41, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1-6, 8, 12-14, 16-17, 19 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1-6, 8, 12-14, 16-17, 19, respectively.

Claims 45 and 46 are similar to claim 34. Therefore, claims 45-46 are rejected under a similar rationale.

Claims 47, 49 are similar to claim 1. Therefore, claims 47, 49 are rejected under a similar rationale.

Claims 48, 50 are similar to claim 12. Therefore, claims 48, 50 are rejected under a similar rationale.

Claim Rejections - 35 USC § 103

3. Claims 1-10, 23-32, 47, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiberg et al. (US 2002/0172264) in view of Felgentreff (US2002/0131522) and Sung et al (U.S. Pat. 7,149,199).

Regarding claim 1, Wiberg discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figure 2); and a transmitter subsystem coupled to the processing subsystem (figure 2); wherein the processing subsystem is configured to cover different portions of an initial data stream comprising an I/Q pair of modulated symbols to be transmitted on a first wireless communication channel with at least two different

spreading codes (figure 2, paragraph 25); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figure 2, paragraph 25). Weberg et al fails to disclose that each spreading code covers each I/Q pairs.

Felgentreff discloses spreading code covering each I/Q pairs as shown in Figure 3 comprising a first I/Q modulator 35 and a second I/Q modulator 36 ([0050]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the dual I/Q modulators as taught by Felgentreff into the teachings of Weberg et al for modulating data signals. The motivation would compensate the pre-distortion signal as illustrated by Felgentreffb see [0048].

Wiberg et al and Felgentreff fail to disclose each portion of being a different quantity of modulated symbols.

Sung et al disclose each portion of being a different quantity of modulated symbols (as shown in Figure 1. Sung et al disclose that FIG. 3b, signal converters 310, 330, 326, 346, 364, 365 convert logical values "0" and "1" into physical signal "+1" and "-1" to be really transmitted. Each channel of FIG. 2 passes through the signal converters and is then spread in spreaders 312, 332 by each output of two Walsh code generators 362, 363. Transmission power of each channel is adjusted in gain controllers 314, 334, and FIG. 3f like FIGS. 3b and 3d, is identical to FIG. 3e except the fact that, an independent Walsh code generator exists at I and Q channels in order to be able to spread I/Q channel transmitting data through a different orthogonal code

symbol. Therefore, it is clear that the portion of an initial data stream is a different quantity of modulated symbols). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modulate the portions of the initial data stream with a different quality of modulated symbols as taught by Sung et al into the teachings of Kim et al and Felgentreff. The motivation would enable to transmit data with a high-speed packet transmission.

Claims 47, 49 are similar to claim 1. Therefore, claims 47, 49 are rejected under a similar rationale.

Regarding claim 2, Wiberg further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 2, paragraph 25; where element 215 is being interpreted as a demultiplexer).

Regarding claim 3, Wiberg further discloses the processing subsystem is configured to cover each of the intermediate data streams with oneof a set of spreading codes, wherein the set of spreading codes includes the at least two different spreading codes (figure 2, paragraph 25).

Regarding claim 4, Wiberg further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 2, paragraph 25; where the adder is being interpreted as multiplex).

Regarding claim 5, Wiberg further discloses the spreading codes are different-length spreading codes (figure 2, paragraph 25; where it is well known in the art that different spreading factors means different code lengths).

Regarding claim 6, Wiberg further discloses the spreading codes are Walsh codes (figure 2, paragraphs 25, 41, 44).

Regarding claim 7, Wiberg further discloses the spreading codes comprise +- and ++-- codes (figures 2, 3, paragraphs 25, 26).

Regarding claim 8, Wiberg further discloses the initial data stream comprises a stream of symbols (figures 2, 3, paragraphs 19, 25, 33, 45).

Regarding claims 9 and 10, Wiberg further discloses the transmitter comprises a component of a base station / mobile station operable in a wireless communication system (figure 1, paragraph 24).

Regarding claims 23-32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1-10 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1-10, respectively.

Claim Rejections - 35 USC § 103

4. Claims 1-6, 8-10, 23-28, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor, Jr. et al. (US 2003/0035466) in view of Sung et al (U.S. Pat. 7,149,199).

Regarding claim 1, Proctor discloses a transmitter operable to communicate with a receiver via a wireless communication channel, wherein the transmitter comprises: a processing subsystem (figures 1-4); and a transmitter subsystem coupled to the processing subsystem (figures 1-4); wherein the processing subsystem is configured to cover different portions of an initial data stream comprising an I/Q pair of modulated symbols to be transmitted on a first wireless communication channel with at least two different spreading codes (figures 1-4, paragraphs 56-63); and wherein the transmitter subsystem is configured to transmit a resulting final data stream on a first wireless communication channel (figures 1-4, paragraphs 56-63).

Proctor fails to disclose each portion of being a different quantity of modulated symbols.

Sung et al disclose each portion of being a different quantity of modulated symbols (as shown in Figure 1. Sung et al disclose that FIG. 3b, signal converters 310, 330, 326, 346, 364, 365 convert logical values "0" and "1" into physical signal "+1" and "-1" to be really transmitted. Each channel of FIG. 2 passes through the signal converters and is then spread in spreaders 312, 332 by each output of two Walsh code generators 362, 363. Transmission power of each channel is adjusted in gain controllers 314, 334, and FIG. 3f like FIGS. 3b and 3d, is identical to FIG. 3e except the fact that, an independent Walsh code generator exists at I and Q channels in order to be able to spread I/Q channel transmitting data through a different orthogonal code symbol. Therefore, it is clear that the portion of an initial data stream is a different quantity of modulated symbols). It would have been obvious to one having ordinary

skill in the art at the time the invention was made to modulate the portions of the initial data stream with a different quality of modulated symbols as taught by Sung et al into the teachings of Kim et al and Felgentreff. The motivation would enable to transmit data with a high-speed packet transmission.

Regarding claim 2, Proctor further discloses the processing subsystem comprises a demultiplexer configured to demultiplex the initial data stream into a plurality of intermediate data streams (figure 4).

Regarding claim 3, Proctor further discloses the processing subsystem is configured to cover each of the intermediate data streams with one of a set of spreading codes, wherein the set of Spreading codes includes the at least two different spreading codes (figures 1-4, paragraphs 56-63).

Regarding claim 4, Proctor further discloses the processing subsystem is configured to multiplex the intermediate data streams into the final data stream (figure 4; where the element proceeding elements 508 is being interpreted as multiplex).

Regarding claim 5, Proctor further discloses the spreading codes are different-length spreading codes (figures 1-4, paragraphs 56-63).

Regarding claim 6, Proctor further discloses the spreading codes are Walsh codes (figures 1-4, paragraphs 56-63).

Regarding claim 8, Proctor further discloses the initial data stream comprises a stream of symbols (paragraphs 10, 54).

Regarding claims 9 and 10, Proctor further discloses the transmitter comprises a component of a base station / mobile station operable in a wireless communication system (figure 1, paragraph 29).

Regarding claims 23-28 and 30-32, the steps claimed as method is nothing more than restating the function of the specific components of the apparatus as claims 1-6 and 8-10 above and therefore, it is rejected as in considering the aforementioned rejection for the apparatus claims 1-6 and 8-10, respectively.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (571) 272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KHAI TRAN/
Primary Examiner, Art Unit 2611

March 25, 2009